Production and Transfers through Unpaid Work by Age and Gender: A Comparative Analysis of Austria, Italy and Slovenia

(*Extended abstract*)

Jože Sambt

Faculty of Economics, University of Ljubljana
Institute of Mathematical Methods in Economics, Vienna University of Technology
E-mail: joze.sambt@ef.uni-lj.si

Bernhard Hammer

Vienna University of Technology, Institute of Mathematical Methods in Economics
E-mail: bernhard.hammer@econ.tuwien.ac.at

Marina Zannella

Institute of Mathematical Methods in Economics, Vienna University of Technology

Alexia Prskawetz

Institute of Mathematical Methods in Economics, Vienna University of Technology,
Vienna Institute of Demography, Austrian Academy of Sciences
Wittgensetin Centre for Demography and Global Human Capital (IIASA, VID/ÖAW, WU)
E-mail: afp@econ.tuwien.ac.at

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Abstract

The rapid population ageing shifts the relation between age of individuals and their economic activity into the focus of policy makers and scientists. This interest asks for the introduction of the age dimension in economic data. National Transfer Accounts are an extension of the System of National Accounts by age and measure for each age group the generation of income, its redistribution across age groups as well as age-specific use of disposable income for consumption and saving. In this paper we extend the analysis further to unpaid work and distinguish also by gender. We estimate how much time each age group devotes to unpaid production activities and how the products and services emerging through these production activities are distributed across age and gender. We then compare the results for Austria, Italy and Slovenia. This analysis also shows that the working age population provides not only monetary transfers to other generations but, in particular to their children, also unpaid work in form of services produced. Unpaid work constitutes not only a transfer to other generations but also a transfer from women to men.

1 Introduction

Increasing longevity and low fertility are causing rapid population aging in developed countries. The projected changes in the age structure will affect total production and consumption and challenge the sustainability of the social security systems. These changes shift the design of the economic life cycle (the type and intensity of economic activities carried out at each age) and the corresponding transfer systems into the focus of policy makers and scientists. This interest in the relation between economic activity and age requires the introduction of the age dimension in economic data. Recently age has been introduced into the System of National Accounts (SNA) by setting up the method of National Transfer Accounts (NTA). National Transfer Accounts (NTA) provide the tools and the data to measure, depict and analyse important aspects of the role of age and age reallocations in the economy: NTA measure how much income each age group generates through the input of labour and capital, how income is redistributed across age groups through public and private transfers and how each age group uses the disposable resources for saving and consumption. The values in NTA are consistent with the System of National Accounts which records the generation of income, its subsequent redistribution among institutional units and its use for the total economy. National Transfer Accounts allocate the SNA quantities to age-groups and provide additionally estimates for transfers between members of the same household, e.g. from parents to children. Intergenerational transfers originate from the fundamental nature of the economic life cycle. At young ages transfers are essential for survival and successful future development of children. Also in old age transfers in form of pension, health care, long-term care etc. contribute to the wellbeing of elderly individuals. The surplus of consumption over individual's production in those two age groups (also denoted as life cycle deficit) is financed by prime age adults who produce more than they consume (i.e. they generate a life cycle surplus). Despite of the qualitatively similar pattern across countries (periods of dependency in young and old age that have to be sustained by the population in working age) there are huge differences among countries regarding the lengths of periods with life cycle deficits and surpluses, but also in the size and structure of the transfers. Transfers can be in form of public transfers or private transfers (most importantly the familial transfers). Additionally, consumption can also be financed out of asset reallocation (savings, loans etc.). At the moment there are 41 countries included in the NTA project.

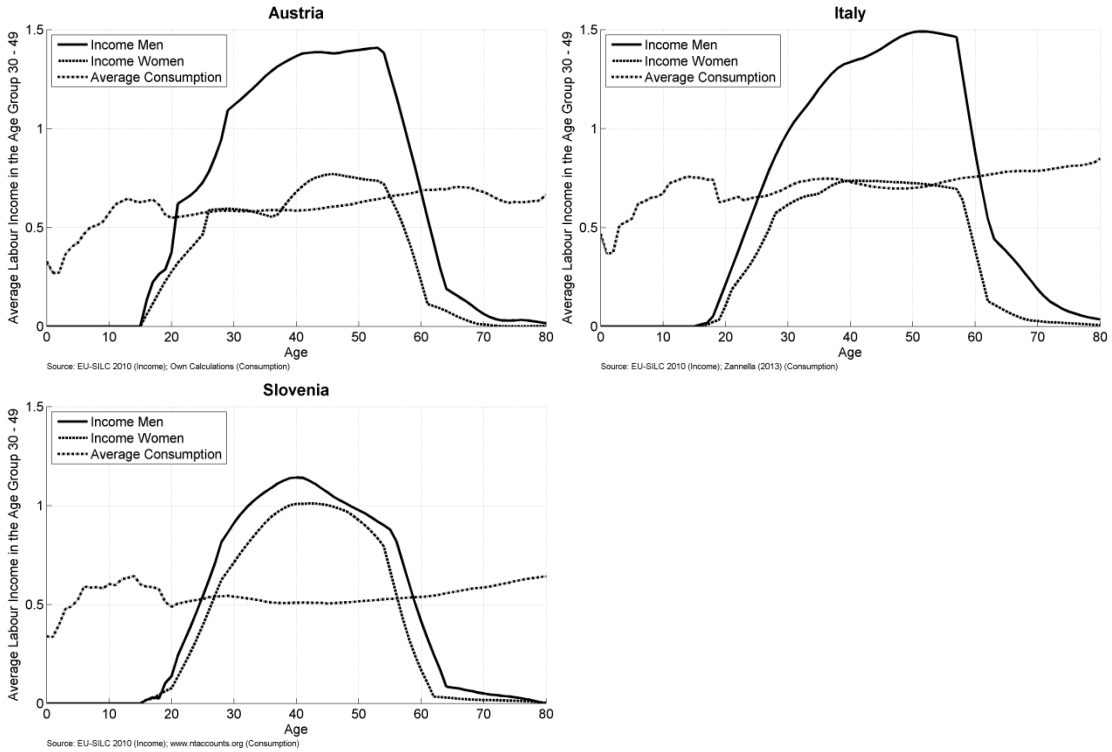
In this paper we present a comparison of the NTA results for Austria, Italy and Slovenia. Previous research highlights the existence of relevant differences in the age patterns of production and consumption among these three countries. These results reflect different historical evolutions, institutional settings and other elements shaping the production, consumption and transfer patterns. To obtain deeper and more comprehensive insight into people's production and consumption at different ages and economic flows between age groups, we extend the analysis to non-market activities and by gender dimension.

2 National Transfer Accounts

Age profiles of market consumption and labour income for Austria, Italy and Slovenia are presented in Figure 1.a-1.c. All values are plotted relative to the average labour income in the age group 30-49. There are remarkable differences between the three countries in terms of their age specific income profile. Slovenia stands out with rather low gender differences in labour income as compared to Austria and Italy. This was a typical feature of socialist countries and it continues in Slovenia also after the change in the socioeconomic system. The Slovenian labour income age profiles also show the early exit from the labour force. The income profile in Austria and Italy for males is quite similar reaching a peak at age 48 for Austria and 50 for Italy compared to Slovenia where income age profiles for male peak at around age 40. Compared to males, females contribute to paid work to a much lesser extent in Austria and Italy. The shape is different across countries with Austria having a typical M-shaped pattern of income profile for females representing the fact that females leave the labour market for some years after giving birth to a child. In Italy the age profile of income is rather flat for females possibly caused by a selection effect. Italy has one of the lowest female employment rates in Europe. Women who enter the labour market are generally those with higher skills and education and, hence, they are less likely to leave the labour market for long periods when they have children. In Slovenia females take 1-year maternity leave and after that they return to work. Part-time work or withdrawal from the labour market for several years is uncommon in Slovenia, therefore motherhood has only minor impact on employment rates and labour income of females.

In terms of the consumption age profile we find a rather smooth pattern for all three countries though the level of consumption relative to labour income is higher in Italy as compared to Austria and Slovenia. We add also the gender dimension to the NTA but since we miss gender specific consumption, we only differentiate by gender in case of the age profile of income.

Figure 1: Labour Income and Consumption by Age and Sex in Relation to Average Labour Income between Age 30 and 49



Source: Hammer, Prskawetz & Freund, 2013.

3 Unpaid Work

Resources are produced and consumed not only through market transactions captured in the SNA but also in form of services originating from unpaid work, i.e. household production that predominantly takes place within the families. The inclusion of the value of unpaid work in the SNA, as an instrument to obtain better measures of actual production and consumption, has long been discussed. So far, unpaid work has been considered by SNA only in the form of "satellite accounts" and as such it is not visible in the core SNA.

Considering unpaid work may be particularly important if we consider Figure 1. The gender specific age profiles of income and consumption might falsely induce one to argue that there is a large flow from males to females (particularly in the case of Austria and Italy), since both genders consume rather similarly but males contribute more to market work as compared to females. This however would be not only a misleading but also a wrong conclusion since from time use surveys we know that in terms of unpaid work the situation is just the other way around, i.e. females in aggregate spend much more time on household production than males. Therefore, introducing the gender dimension to the NTA framework should not be done without also extending the analysis to unpaid work.

Therefore we extend our NTA results that are based only on the market economy by gender and by considering unpaid work. Thereby we will gain a more comprehensive picture about people's production and consumption at different ages and flows of transfers among them. From national Statistical offices we were able to obtain detailed time use survey data on the lowest level of disaggregation. Therefore we can provide more detailed insight into people's activities than is possible from international data sources like MTUS where categories are already aggregated for comparability reasons.

3.1 The Data and the Method

The analysis builds upon the time use survey data conducted in 2008 (Austria and Italy) and 2000 (Slovenia). Unfortunately, there is no more recent time use survey available for Slovenia and, hence, we have to keep this time difference of 8 years between the Slovenian and Austrian/Italian survey in mind when interpreting the results. The sample size is 8,234/44,606/6,190 individuals for Austria/Italy/Slovenia representing 0.10/0.07/0.31 percent of the total population. In Italy and Slovenia each respondent has recorded his/her activities on two different days. Thus, the number of cases is about double the size reported above.

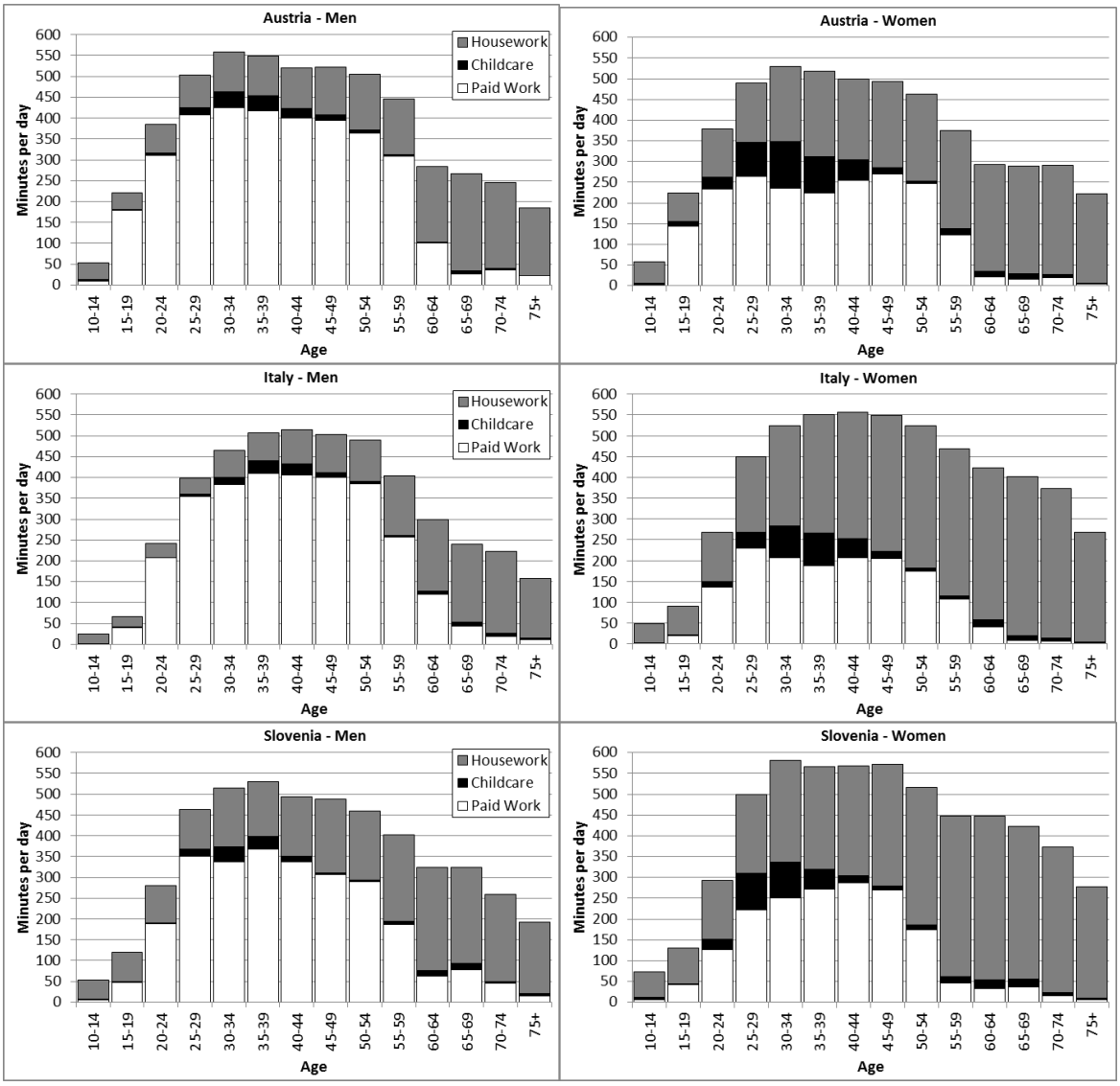
When identifying the unpaid work, we have to first distinguish unpaid work from other activities on which people spend time. We apply the third party criterion. The criterion is whether a person could pay someone else to do the task for him/her or not. This approach separates activities like eating, sleeping, leisure etc. from unpaid work. The data in time use survey are available at the individual level. Available is also the information about the age and sex of each respondent and therefore creating age profiles is straight forward. The total number of minutes that all persons of a specific age and gender spend on an activity is divided by the total number of individuals of that age and gender. We group data on activities to meaningful larger groups in line with the HETUS classification and the purpose of our analysis. Not all individuals have devoted time to all groups of the activities we present. Therefore we decompose average number of minutes spent on different activities to a) the share of individuals involved in certain activity and b) the average time spent on the activity out of those who were involved in that activity. With this information we can see whether the differences across countries originate from the prevalence at which an activity is conducted within a society or the frequency of the activity among those who conduct the activity.

3.2 Results

Figure 2 plots the average time used for the most important production activities (housework, childcare, paid work) by age and gender for the three countries. There are remarkable cross-country differences in the total level of production as well as in the distribution of production between men and women. Among the most distinct results is the smaller amount of time which is devoted to paid work by men in Slovenia, which may also explain the small

differences in labour income of men and women. While Austrian and Italian men at age 30-49 devote about 400 minutes per day to paid work, the corresponding value for Slovenian men is about 350 minutes.

Figure 2: Production Activities by Age and Gender in Minutes Per Day



Italian women devote on average little time to paid work: about 200 minutes in the age from 30 to 49, compared to about 250 minutes in Austria and Slovenia. However, Italian women in working age devote much more time to housework as compared to Austrian women and slightly more than Slovenian women. The average time women devote to total production is therefore about the same in Italy and Slovenia: about 550 minutes in Italy and Slovenia and slightly more than 500 minutes in Austria. In Slovenia and Italy women work more than men: with more than 550 minutes per day they devote about 50 minutes more to production than men with slightly more than 500 minutes.

Table 1 gives an overview also over other types of activities. Little time is devoted to adult care and voluntary work: on average between 3 and 5 minutes to adult care and between 5 and 12 minutes to voluntary work. The categories leisure and personal care mirror the time which is devoted to production activities: there are clearly differences across age-groups: In all of the countries men and women above the age of 60 devote the highest amount of time to leisure and personal care. However, in age above 60 the personal care is the same for both genders, whereas females continue to be much more involved in unpaid work than males. Consequently, they are left with much less leisure time than males.

Table 1: Average Time Use by Age, Gender and Activity in Minutes per Day

	Slovenia - Men					Slovenia - Women				
	10-24	**25-39**	**40-59**	**60+**	**Total**	**10-24**	**25-39**	**40-59**	**60+**	**Total**
Housework	71	123	172	218	**145**	102	228	310.5	341	**258**
Childcare	2	29	7	10	**10**	13	73	13	12	**25**
Voluntary	9	10	13	13	**12**	4	6	6	5	**5**
Adultcare	2	3	4	3	**3**	2	3	4	5	**4**
Paid Work	89	352	288	53	**179**	67	249	212	22	**121**
Personal Care	667	610	623	693	**658**	675	615	621	693	**659**
Leisure	400	293	326	444	**384**	363	243	265	357	**319**
Education	192	15	2	1	**42**	209	17	3	1	**43**
Other/Unknown	7	6	6	5	**7**	5	6	5	4	**6**
Total	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**

	Austria - Men					Austria - Women				
	10-24	**25-39**	**40-59**	**60+**	**Total**	**10-24**	**25-39**	**40-59**	**60+**	**Total**
Housework	51	90	114	180	**114**	83	192	232	291	**216**
Childcare	3	30	14	4	**13**	15	84	21	8	**30**
Voluntary	4	8	7	10	**7**	9	5	3	7	**6**
Adultcare	1	1	2	4	**2**	1	2	6	6	**4**
Paid Work	174	417	388	113	**273**	139	253	268	37	**164**
Personal Care	665	596	619	722	**653**	683	631	639	727	**675**
Leisure	350	285	287	399	**331**	323	254	260	359	**303**
Education	189	9	5	2	**42**	183	16	6	2	**38**
Other/Unknown	3	3	4	6	**4**	3	3	6	3	**4**
Total	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**

	Italy - Men					Italy - Women				
	10-24	**25-39**	**40-59**	**60+**	**Total**	**10-24**	**25-39**	**40-59**	**60+**	**Total**
Housework	28	59	102	172	**97**	78	242	329	329	**270**
Childcare	1	20	13	6	**11**	7	67	22	8	**25**
Voluntary	3	5	6	13	**7**	6	6	11	15	**10**
Adultcare	1	1	3	5	**3**	2	2	7	6	**5**
Paid Work	85	386	367	48	**241**	52	205	176	12	**113**
Personal Care	702	670	659	742	**691**	707	672	657	728	**690**
Leisure	389	283	287	451	**346**	345	223	235	340	**282**
Education	231	15	1	1	**44**	243	20	2	1	**43**
Other/Unknown	1	1	2	1	**1**	2	2	2	1	**1**
Total	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**	**1440**

Interesting is also a closer analysis of housework activities presented in Table 2. The housework carried out by men is rather similar in the three countries with the exception of gardening: Slovenian men devote considerably more time to gardening and pet care than Austrian and Italian men. Women spend in all of the countries much more time to housework activities than men; the total amount is with an average of 258 and 270 minutes is similar in Slovenia and Italy. Slovenian women devote more time to cooking and gardening, while Italian women spend more time on cleaning than in the other countries. Austrian women devote with an average of around 216 minutes less time to housework, which can be by explained by the much lower amount of time used for cooking and the lower amount of time used for cleaning activities.

Table 2: Further Decomposition of the 'Housework' Category from Table 1: Average Time Use by Age, Gender and Activity in Minutes per Day

	Slovenia - Men					Slovenia - Women				
	10-24	**25-39**	**40-59**	**60+**	**Total**	**10-24**	**25-39**	**40-59**	**60+**	**Total**
Cooking	10	15	24	27	**19**	33	90	124	146	**105**
Cleaning	19	23	33	45	**29**	30	50	61	61	**54**
Laundry	0	1	1	3	**1**	6	27	37	38	**28**
Shopping	13	22	30	32	**22**	20	35	38	33	**28**
Gardening/Pet Care	20	35	57	79	**48**	13	24	45	59	**38**
Construction/Repair	8	25	22	28	**22**	1	2	2	1	**2**
Other	2	3	4	5	**3**	1	2	3	2	2
Total	**71**	**123**	**172**	**218**	**145**	**102**	**228**	**310**	**341**	**258**

	Austria - Men					Austria - Women				
	10-24	**25-39**	**40-59**	**60+**	**Total**	**10-24**	**25-39**	**40-59**	**60+**	**Total**
Cooking	10	18	22	29	**20**	22	61	71	95	**68**
Cleaning	9	16	22	36	**22**	17	41	49	59	**45**
Laundry	0	3	4	5	**3**	6	25	33	39	**29**
Shopping	17	21	26	39	**27**	24	36	37	44	**37**
Gardening/Pet Care	4	11	19	41	**20**	8	17	28	41	**26**
Construction/Repair	6	16	14	21	**15**	3	3	2	2	**2**
Other	5	6	7	10	**7**	4	9	11	10	**9**
Total	**51**	**90**	**114**	**180**	**114**	**83**	**192**	**232**	**291**	**216**

	Italy - Men					Italy - Women				
	10-24	**25-39**	**40-59**	**60+**	**Total**	**10-24**	**25-39**	**40-59**	**60+**	**Total**
Cooking	6	14	21	32	**20**	25	84	119	127	**99**
Cleaning	6	11	16	25	**16**	24	77	100	98	**82**
Laundry	0	0	1	1	**1**	3	21	35	40	**28**
Shopping	7	14	23	33	**21**	16	30	38	34	**31**
Gardening/Pet Care	3	5	18	48	**20**	2	3	9	12	**8**
Construction/Repair	1	3	5	6	**4**	0	0	0	0	**0**
Other	5	11	18	27	**16**	8	27	27	19	**22**
Total	**28**	**59**	**102**	**172**	**97**	**78**	**242**	**329**	**329**	**270**

3.2.1 Consumption

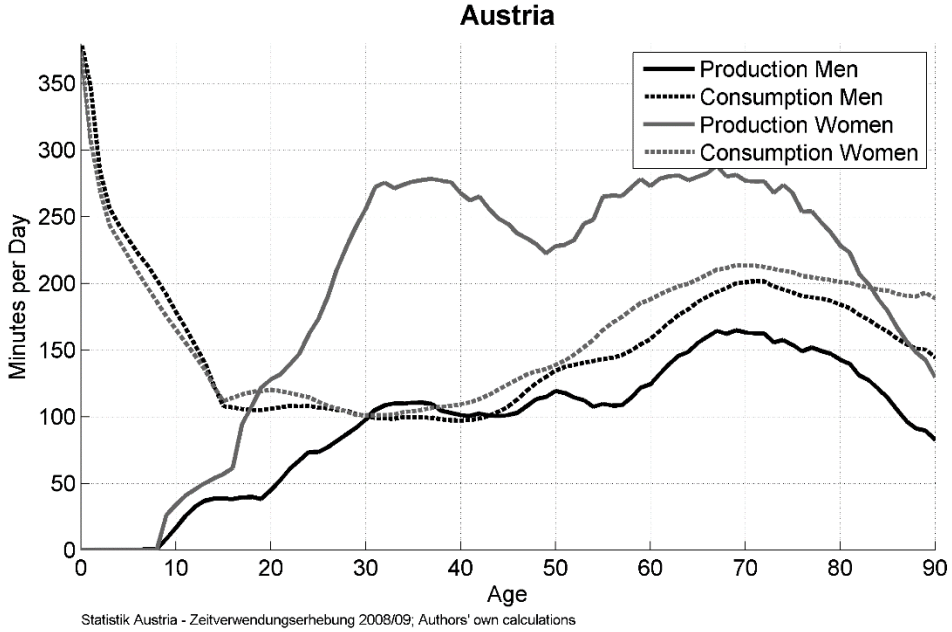
A novelty in our paper is that we do not only estimate the age-specific involvement in unpaid work, but also age-specific consumption of goods and services which are produced through these production activities. By combining age patterns of production and consumption we will obtain transfers across age groups in form of unpaid work.

The age- and gender-specific estimates for the consumption of goods and services emerging from unpaid work require assumptions about their distribution within the households. The basic assumption regarding the consumption of these goods and services (excluding childcare) is that they are distributed within the household in equal shares, i.e. every household member consumes the same amount. Such an assumption is necessary since it is not observable how much each member of the household really consumes. To calculate the consumption of goods and services produced by household members we sum up the total time which is spent to produce these goods and services, divide it equally among all household members and calculate the average consumption level for each age group. The consumption age profiles are then adjusted so that aggregate consumption (age averages multiplied by population numbers and added up over all ages) through unpaid work equals aggregate production.

Childcare is treated differently: the bulk of childcare activities are enjoyed by the children in the first years of their life, the amount of consumption is therefore strongly dependent on the age of the child. When several children are cared for at the same time the time used for childcare has to be distributed to all of the children. Since younger children usually require more attention we distribute the childcare activity according to an equivalence scale which is generated using the information on the amount of time which is used for childcare by parents with only one child. After distributing the time which is used for childcare activities to the children in the household, we take the age averages.

Figure 3 shows the age profiles of production and consumption of unpaid household work for Austria. For women production is concentrated in the childbearing ages (childcare) as well as in old age. From about the age of 20 until very old age women produce more through unpaid work than they consume. During working age (until about 55) a large part of their production constitutes a transfer to their children, but a large part of their production is also transferred to their partner living in the same household. Men produce only around the age of 30 more than they consume, they rely on the production of their female partners. The consumption age profile indicates that in working age a large share of time is used to produce goods and services for other household members, mainly children. In old age a lot of time is devoted to unpaid work as well, but this production is largely consumed by the elderly themselves.

Figure 3: Male and Female Production and Consumption in Form of Unpaid Work



Conclusions

Including unpaid work strongly changes the results of the basic (market) part of NTA regarding how much work provide males compared to females. In Austria paid and unpaid work load together (paid work, childcare and housework) becomes similar for both genders whereas in Slovenia and Italy work load of females even by far surpasses the work load of males. The composition of workload of females in Italy and Slovenia is inherently different: in Slovenia females are strongly involved in paid work, which is characteristic of ex-socialistic countries. After they finish with the work in the formal sector they work another "shift" at home, which is in line with the "double shift" hypothesis known from the literature. The consequence is a high work load of above 550 minutes per day during the entire working period. The highest workload in form of unpaid work remains also after the retirement. On the other hand, in Italy females provide less paid work but their work load during the working age is even higher than in Slovenia. Austria shows more traditional pattern with gender work division – males are more involved in paid work and females more in unpaid work. Our analysis also shows that the working age population provides not only monetary transfers to other generations but as parents also in form of services produced through unpaid work. In Austria women at age 30-35 spend almost three hours a day working for the other household members.